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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/759,873
Filing Date: January 16, 2004
Appellant(s): KIRSCHNER, KRAIG A.

John D. McConaghy
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 5, 2005 appealing from the Office action mailed November 30, 2004.

[Handwritten signature]

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

This appeal involves claims 1-3.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

Claims 1 and 2 are rejected under 35 U.S.C. §103(a) as being unpatentable over applicant's description of the prior art as described in the information disclosure statement received July 30, 2001 in parent application 09/844807 (Appendix) and made of record in this application in view of Koyama (US 5259165) and Rebentisch (US 4784552).

Claim 3 is rejected under 35 U.S.C. §103(a) as being unpatentable over applicant's description of the prior art as described in the information disclosure statement received July 30, 2001 in parent

application 09/844807 (Appendix) in view of Koyama (US 5259165) and Rebentisch (US 4784552) as applied to claim 1 above, and further in view of Steinke (US 4408928).

The obviousness-type double patenting rejection is properly stated.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4408928	Steinke	10-1983
4784552	Rebentisch	11-1988
5259165	Koyama	11-1993
6749359	Kirschner	6-2004

The information disclosure statement received July 30, 2001 in parent application 09/844807 and made of record in this application and provided as an Appendix to this answer.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. patent 6749359 in view of Rebentisch (US 4784552). Although the conflicting claims are not identical, they are not patentably distinct from each other because patent claim 1 includes the steel web joist including a beam with two angle elements, an anchor plate, an engagement plate and stud. While patent claim 1 describes the engagement plate as having an engagement profile, the profile is described in detail as having a tapered tongue and diverging shoulders and pending claim 1 does not detail the structure of the engagement profile, the broad recitation of an engagement profile in pending claim 1 is obvious over the detailed structure of the

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engagement profile of patent claim 1 because it performs the same function. Further, pending claim 1 recites the upstanding portions as being at an obtuse angle substantially greater than 90 degrees. While patent claim 2, recites the upstanding engagement portion being at an obtuse angle, it does not state that the obtuse angle is substantially greater than 90 degrees. It would have been obvious to modify the claimed structure of Patent No. 6749359 to have the upstanding portions extend at an obtuse angle substantially greater than 90 degrees in view of Rebentisch (US 4784552) (figures 2, 3) teaching the upstanding engagement portions 24 extending at an obtuse angle substantially greater than 90 degrees from the flat anchor portion so as to form a biting edge to grip the legs 26 to thereby more securely hold the engagement plate to the channel and prevent it from moving (col. 2, lines 41-48), a significant advantage to maintain the correct position of the connection. In regard to pending claim 2, patent claim 2 suggests this subject matter. As to pending claim 3, patent claim 3 suggests the tongue and shoulders as indicated above, thereby rendering obvious the subject matter of this claim.

Claims 1 and 2 stand rejected under 35 U.S.C. §103(a) as being unpatentable over applicant's description of the prior art as described in the information disclosure statement received July 30, 2001 in parent application 09/844807 and made of record in this application in view of Koyama (US 5259165) and Rebentisch (US 4784552).

Applicant's description of the prior art is described in the information disclosure statement received July 30, 2001 in parent application 09/844807 and made of record in this application. Therein applicant describes how the AFCON Flyer 962 square washer is utilized by stating that "This washer is prior art to the present invention and has been employed in the prior art in pairs with a threaded shaft extending therebetween, held by nuts where the washers are placed above and below a cord space in the upper beam of a steel web joist such as disclosed in the resent application. Hangers have been coupled with the shaft extending between the washers. This coupling is typically below the lower washer and is

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held in place by the nut threaded onto the shaft." Thus applicant has described a seismic suspension system with a steel web joist such as disclosed in this application with the two angle elements, each having a first leg and a second leg, the first legs being parallel with a cord space therebetween and the second legs extending in opposite direction, an anchor plate and an engagement plate placed respectively above and below the cord space with the anchor plate held in juxtaposition with the second legs and the engagement plate held against the edges of the first legs by nuts upon a threaded shaft. The threaded shaft extends below the engagement plate and can receive a hanger, which is secured by the lower nut. The prior art described by applicant fails to provide the engagement plate with upstanding engagement portions to either side of the flat anchor portion, the engagement plate extending across the cord space with each upstanding engagement portion having a distal edge with an engagement profile in interlocking engagement with the first legs wherein each engagement portion being at an obtuse angle substantially greater than 90 degrees to the flat anchor portion. However, Koyama (figures 3, 4 and claims 1 and 3-6) teaches a similar suspension system and further suggests in combination the steel web joist including a beam with two angle elements 4, each having a first leg and a second leg, the first legs being parallel with a cord space therebetween and the second legs extending in opposite directions; an anchor plate 2 having a first hole 2g therethrough; an engagement plate 3 including a flat anchor portion 3c having a second hole 3g therethrough and upstanding engagement portions 3a, 3b to either side of the flat anchor portion 3c, the engagement plate 3 extending across the cord space opposite the anchor plate 2, the upstanding engagement portion 3a having a distal edge with an engagement profile defined by central tongue 3e extending between the shoulders 3d, the other upstanding engagement portion 3b has a distal edge with an engagement profile defined by central tongue 3f which interlocks the engagement portion 3b between the first legs so that it will not move laterally to either the left or right as shown in figure 4.

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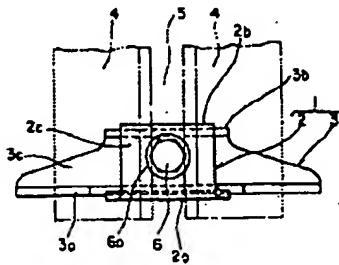


Figure 3

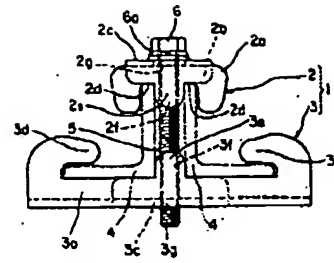


Figure 4

The engagement plate securely interlocks the first legs together by contacting the first legs between the second legs by the tongue 3e. Applicant indicates the structure that provides interlocking engagement in the specification [0007] by stating "In a second separate aspect of the present invention, the engagement plate includes distal edges with tongues extendible to between the parallel legs of the steel web joist beam for interlocking engagement." This establishes that all that is required for interlocking engagement is that the engagement plate distal edges include tongues extendible between the parallel legs of the web joist and Koyama provides such structure in tongues 3e and 3f. While the last sentence of [0007] states, "Shoulders to either side of each tongue may abut against the edges of the legs", the use of the term "may" indicates that the shoulders are not required for interlocking engagement to exist. A stud extends from the first hole 3g to and beyond the second hole 2g, the stud is adapted to secure the anchor plate and the engagement plate to the beam of the steel web joist. The bolt acts as a support for an object suspended therefrom as indicated in claims 3-6 of Koyama. The tongues 3e and 3f are sandwiched by the first legs and act to hold the angle elements at a given interval (col. 3, lines 11-15) and thereby provide better dimensional stability to the beam thereby providing an engineering advantage. Applicant is reminded that "[I]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968). The Koyama reference would suggest to one of ordinary skill in the art that the engagement plate 3 would be prevented from lateral movement by the tongues 3e, 3f being interlocked between the first legs

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and therefore have the benefit of maintaining the threaded shaft in a position that prevents lateral movement of the attachment while also contributing to the greater dimensional stability of the beam. Further, Rebentisch (US 4784552) (figures 2, 3) teaching the upstanding engagement portions 24 extending at an obtuse angle substantially greater than 90 degrees from the flat anchor portion so as to form a biting edge to grip the legs 26 to thereby more securely hold the engagement plate to the channel and prevent it from moving (col. 2, lines 41-48), a significant advantage to maintain the correct position of the connection. Accordingly, it would have been obvious to modify the prior art described in the information disclosure statement received July 30, 2001 in parent application 09/844807 and made of record in this application to include upstanding engagement portions to either side of the flat anchor portion, the engagement plate extending across the cord space with each upstanding engagement portion having a distal edge with an engagement profile in interlocking engagement with the first legs as shown in Koyama so as prevent lateral movement of the engagement plate while also providing for greater dimensional stability of the beam and as to each upstanding engagement portion being at an obtuse angle substantially greater than 90 degrees to the flat anchor portion Rebentisch teaches that it would have been further obvious to have the upstanding engagement portions 24 extending at an obtuse angle substantially greater than 90 degrees from the flat anchor portion so as to form a biting edge to grip the legs 26 to thereby more securely hold the engagement plate to the channel and prevent it from moving (col. 2, lines 41-48), a significant advantage to maintain the correct position of the connection.

As to claim 2, the prior art as described in the information disclosure statement received July 30, 2001 in parent application 09/844807 and made of record in this application utilizes a nut to hold the square anchor plate in the form of the 962 square washer in place and fails to state that hole in the anchor plate itself can be threaded. However, Koyama recognizes the equivalence of a separate nut to secure the plate and a threaded aperture to secure a plate thereby providing a strong secure connection in the passage found in column 4, lines 23-28:

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"According to the first embodiment, the fixing member 6 is screwed into the screw hole 3g defined on the lower metal fitting 3. However, the lower metal fitting 3 may have a small hole 3h therein through which the fixing member 6 is inserted and fixed by a nut 6b by way of a washer 6a as illustrated in FIG. 8. "

Accordingly, it would have been obvious to modify the anchor plate as described in the information disclosure statement received July 30, 2001 so that the hole itself is threaded in view of Koyama teaching that this is an equivalent desirable structure to having a separate nut in providing a strong connection.

Claim 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over applicant's description of the prior art as described in the information disclosure statement received July 30, 2001 in view of Koyama (US 5259165) and Rebentisch (US 4784552) as applied to claim 1 above, and further in view of Steinke (US 4408928).

Further modification suspension system described by applicant as prior art so that the engagement plate suggested by Koyama has shoulders sandwiching the tongue, not just on one engagement portion, but on both would have been obvious in view of Steinke (figures 2-5) teaching that it is desirable to enhance the interlocking engagement by having shoulders 57 on each upstanding engagement portions so as to have a better interlocking securement (col. 5, lines 6-10).

(10) Response to Argument

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ 2d 1941 (Fed. Cir. 1992). In this case, Koyama teaches the use of tongues 3e, 3f sandwiched between the first legs and act to hold the angle elements at a given interval (col. 3, lines 11-

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15) and thereby provide better dimensional stability to the beam and provide an engineering advantage. This is a clear suggestion to provide an enhanced structure since dimensional stability is obviously desirable and if applicant believes that maintaining dimensional stability is not of similar importance in a seismic adaptor then applicant should indicate why dimensional stability as specifically indicated by Koyama is of no concern to him. There are strong engineering safety concerns that would make dimensional stability desirable so that the building structures perform predictably under stress and are prevented as much as possible from failing when dimensional stability no longer exists. Koyama indicates the tongues exist for maintaining the angle elements at a given interval and such is a requirement for good safety and applicant has not reached a nonobvious result in the scope of these claims from the arguments provided. Koyama clearly realized the use of tongues between the angles provides dimensional stability. Appellant indicates in the Brief on page 4, ¶3:

The advantages of this device, realized by these distinguishing features, include a mechanism allowing greater lateral location and stability, greater flexibility and the imposition of anchoring forces which achieve a higher contact pressure and an advantageous angle of approach to the anchoring contact.

Koyama provides structure to hold the double beams 4 at a given interval of separation (col. 3, lines 11-15) and therefore provides the motivation to combine the teachings of Koyama with the primary reference for the purpose of greater stability, a reason provided by appellant in his brief for his own structure.

Similarly, Rebentisch provides for the upstanding engagement portions 24 extending at an obtuse angle substantially greater than 90 degrees from the flat anchor portion so as to form a biting edge to grip the legs 26 to thereby more securely hold the engagement plate to the channel and prevent it from moving (col. 2, lines 41-48). This provides a clear statement that it is desirable to have an obtuse angle so as to maintain the position of the fastener and clearly this is a desirable result. The biting grip is generated by

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the obtuse angle of the device of Rebentisch providing a higher contact pressure. Repeating the above, appellant indicates in the Brief on page 4, ¶3:

The advantages of this device, realized by these distinguishing features, include a mechanism allowing greater lateral location and stability, greater flexibility and the imposition of anchoring forces which achieve a higher contact pressure and an advantageous angle of approach to the anchoring contact.

Rebentisch provides structure via an obtuse angle that provides for anchoring forces which achieve a higher contact pressure and prevent it from moving (col. 2, lines 41-48) therefore provides the motivation to combine the teachings of Rebentisch with the primary and secondary references for the purpose of higher contact pressure, a reason provided by appellant in his brief for his own structure.

Appellant argues Koyama by indicating in the Brief on page 6, ¶2:

Relevant to the first criteria required for a *prima facie* case of obviousness, the elements 2 and 3 are formed to retain the two angle elements of the beam 4 in place rather than to create a suspension device and, therefore, are part of the beam structure. Indeed, element 3 can only be assembled over the end of the beam and not with the beam already in place in a structure such as would be required for a hanger. Further, the device is inverted in that there is no stud extending beyond the second hole in element 2. If used with the beam 4 oriented the same as the present case The first criteria that there be some suggestion or motivation is not taught in either the admission or in Koyama. The devices have different purposes and applications and Koyama cannot be used as a hanger.

The issue of motivation is addressed above. With regard to the manner in which the device of Koyama is assembled, it is pointed out that appellant has no structure in the claimed engagement profiles that indicates the assembly is engaged on the angled beams prior to assembling the beams in place,

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thereby rendering the argument a non-issue and further that while the claims utilize the term “suspension” on line 1 of claim 1, there is no hanger claimed, the primary reference is directed to the overall usage and claim 1 utilizes the open ended language “comprising” on line 1 indicating other structure can be provided and clearly Koyama does teach a suspension system wherein other structures comprising metal fittings 7 are used to suspend ducts 8 (figure 6) or an air conditioner 9 (figure 7) that are directly connected to the beams and fall within the scope of a “suspension” system and the open ended claim construction utilized by appellant as shown by the term “comprising”. The claim construction is broad and it must be stressed that no hanger is mentioned anywhere in the claims.

Appellant further argues with respect to Rebentisch in the Brief on page 7, following the reproduced figures 2 and 3:

Of course, the nut 10 of Rebentisch is not a plate but a formed concaved structure operating as a nut.

Obviously, appellant’s “plate” has a threaded hole as indicated in appealed claim 2 so as to perform as a “nut” and the device 10 of Rebentisch has a substantial length and width relative to its depth so as to be properly considered a plate and appellant provides no discriminant to distinguish over the device of Rebentisch. Further, while the device of Rebentisch serves to clamp an item to a channel, an analogous function to appellant’s device, it is again noted that appellant nowhere claims a hanger and Rebentisch serves to show that it is common to seek to maintain a fixed location upon a channeled item.

An argument quoted above from the Brief on page 4, ¶3 is reproduced again below as it bears on an argument made by appellant:

The advantages of this device, realized by these distinguishing features, include a mechanism allowing greater lateral location and stability, greater flexibility and the imposition of anchoring forces which achieve a higher contact pressure and an advantageous angle of approach to the anchoring contact.

Appellant argues that the engagement plate provides for “flexibility” with for the first time an added measure of “rigidity” found in the brief on page 9, ¶1:

The elements of appealed claims 1 and 2 are also significant to the utility of the invention of the present application and not mere design choices. The obtuse angle provides a structure which can be designed to provide a degree of flexibility which could not be realized in the Koyama or Rebentisch devices. The thickness of the engagement plate is design choice. However, the mechanism of the obtuse angle creates relatively more flexibility in terms of the response to a tightening of the studs than were the engagement portions perpendicular to the legs of the web joist. The obtuse angle also creates a wider base and greater lateral rigidity than that which is disclosed in Koyama. Again, it is a matter of design choice how rigid and how wide, once employing, the novel mechanism is of the obtuse orientations of the upstanding engagement portions. The distinguishing features of claims 1 and 2 are significant.

Though appellant ends this paragraph with “The distinguishing features of claims 1 and 2 are significant”, there is nothing in the claims indicating the engagement plate either provides “a degree of flexibility” or “rigidity” and further there is nothing in the specification indicating the engagement plate either provides “a degree of flexibility” or “rigidity”. Any argument can be presented for any structural plate to indicate an advantage to resilience just as well as an argument to indicate an advantage for a rigidity so as to maintain dimensional stability and a fixed location, but it must be based on whether the plate characteristics are described in the application as filed as being resilient or rigid. Review shows appellant’s disclosure has no basis for the plate being resilient, appellant has not claimed the plate to possess resilient characteristics, and appellant has shown no antecedent basis in the application as filed for the engagement plate to possess resilient characteristics though having repeated opportunities to do so it is submitted that the conclusion must be reached that the argument is a non-issue and cannot be a basis for distinguishing over the prior art. Appellant is arguing for an advantage that has no basis in the application as filed. Appellant seeks to move from a matter of purely designing the angles to be obtuse without the

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plate characteristics being described as being resilient to simply posit that the engagement plate is flexible to an advantage derived from positing that the plate is flexible. Such an argument that is groundless in the application as filed merits no weight. Koyama and Rebentisch respectively explicitly state that they provide greater lateral stability by maintaining the interval between the angle elements and improved fixed location of the fastener and are the motivation and reasons to combine the references.

Appellant argues with respect to Steinke that he fails to provide any angled upstanding engagement element. However, Rebentisch is relied upon for this feature and while appellant argues that Steinke does not suggest hanging another element Steinke serves to clamp an item to a channel, an analogous function to appellant's device, and it is again noted that appellant nowhere claims a hanger and Steinke serves to show that it is common to seek to utilize shoulders in a similar manner to that of Koyama so as to have a better interlocking securement (col. 5, lines 6-10) at a fixed location upon a channeled item.

As to the obviousness-type double patenting rejections, appellant argues that Rebentisch is applied the same way and the same observations are applicable. However, patent claim 2 clearly indicates that the upstanding engagement portion is at an obtuse angle and Rebentisch is only relied upon to show that the obtuse angle can be substantially greater than 90° and certainly shows such a limitation as indicated above.

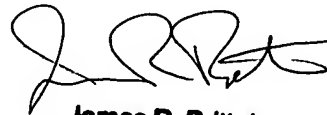
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(11) Related Proceeding(s) Appendix


No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

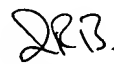
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


James R. Brittain
Primary Examiner

Conferees:

J. J. Swann 

J. Brittain 

J. Lavinder 